



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,102	10/01/2001	Boris A. Maslov	57357-016	4783
7390 10/29/2003				
McDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096		EXAMINER I.E. DANG D		
		ART UNIT 2834 PAPER NUMBER		

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,102	MASLOV ET AL.	
	Examiner	Art Unit	
	Dang D Le	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s): _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 0803 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/21/03 have been fully considered but they are not persuasive.

First of all, the examiner would like to present three well-known facts in the art of motor and generator. The motor can be made generator or vice versa. See Freise (4,550,280), column 1 and Motodate et al. (4,908,540), column 1. The stator and rotor can be made either inner or outer. See Artus et al. ; Eakman et al. (5,726,560); Higuchi (4,683,391); and Freise for outer stators. See Arnoux et al. and Motodate et al. for inner stators. The ferromagnetic core segments can be made ferromagnetically isolated for the purpose of concentrating flux in order to provide higher torque and lower mass. See Artus et al., Figure 3 and column 2; Arnoux et al., Figures 1 and 2 and column 3, lines 25-40; Freise, column 1, lines 58-64; and Higuchi, Figure 5(a).

Therefore, it would have been obvious to one having ordinary skill in the art to modify the motor of De Filippis in order to obtain a high torque and low mass motor. Using the independent ferromagnetic core segments of Arnoux et al. can further reduce the amount of laminations. Moreover, references may be combined although none of them explicitly suggests combining one with the other. In re Nilssen, 7 USPQ2d 1500 (Fed. Cir. 1989).

Although "Arnoux device is not a motor", Arnoux and De Filippis references are classified in the same class and subclass. As presented above, the motor can be made

to perform the work of a generator and the generator can be made to do the work of the motor.

It is further noted that the "starting torque" the examiner mentioned in the last office action is the starting torque of the flywheel caused by interaction between the permanent magnets and the stator cores. (The examiner should have indicated that "for the purpose of increasing starting torque of the motor"). In fact, if a motor is designed with the structure shown Arnoux et al., higher starting torque of the motor can be obtained because the magnetic flux can be concentrated.

In addition, although Artus et al. show an outer stator and Arnoux et al. show an inner stator, the stator cores in these references can concentrate flux for the purpose of increasing torque.

As a result, the rejection is still deemed proper and repeated hereinafter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 5, 7, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Filippis in view of Arnoux et al.

Regarding claim 1, De Filippis shows all of the limitations of the claimed invention except for a plurality of ferromagnetic core segments ferromagnetically isolated from each other.

Arnoux et al. show a plurality of ferromagnetic core segments ferromagnetically isolated from each other for the purpose of increasing torque and reducing mass of the motor.

Since De Filippis and Arnoux et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the plurality of ferromagnetic core segments ferromagnetically isolate from each other as taught by Arnoux et al. for the purpose discussed above.

Regarding claims 2, 5, 7, 13, and 15, it is noted that De Filippis and Arnoux et al. also show all of the limitations of the claimed invention.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Filippis in view of Arnoux et al. as applied to claim 2 above, and further in view of Isaak et al.

Regarding claim 3, the motor of De Filippis modified by Arnoux et al. includes all of the limitations of the claimed invention except for said volume further comprising a power supply.

Isaak et al. show the volume further comprising a power supply (4) for the purpose of reducing size.

Since De Filippis, Arnoux et al., and Isaak et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a power supply in the volume as taught by Isaak et al. for the purpose discussed above.

Regarding claim 4, it is noted that De Filippis also shows all of the limitations of the claimed invention.

6. Claims 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Filippis in view of Arnoux et al. as respectively applied to claims 5 and 2 above, and further in view of Eakman et al.

Regarding claim 6, the motor of De Filippis modified by Arnoux et al. includes all of the limitations of the claimed invention except for the winding of each stator segment

comprising a winding portion on each stator pole, the winding portions of each pole pair being wound in opposite directions and connected in series.

Eakman et al. show the winding of each stator segment comprising a winding portion on each stator pole, the winding portions of each pole pair being wound in opposite directions and connected in series for the purpose of reducing weight.

Since De Filippis, Arnoux et al., and Eakman et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the winding of each stator segment with a winding portion on each stator pole, the winding portions of each pole pair being wound in opposite directions and connected in series as taught by Eakman et al. for the purpose discussed above.

Regarding claims 8 and 9, it is noted that Eakman et al. also show all of the limitations of the claimed invention.

7. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Filippis in view of Arnoux et al. and Isaak et al. as applied to claim 3 above, and further in view of Fatula, Jr. et al.

Regarding claim 10, the motor of De Filippis modified by Arnoux et al. and Isaak et al. includes all of the limitations of the claimed invention except for said power supply comprising a plurality of replaceable batteries.

Fatula, Jr. et al. show said power supply comprising a plurality of replaceable batteries for the purpose of improving efficiency.

Since De Filippis, Arnoux et al. Isaak et al. and Fatula, Jr. et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the power supply with a plurality of replaceable batteries as taught by Fatula, Jr. et al. for the purpose discussed above.

Regarding claim 11, it is noted that Fatula Jr. et al. also show said batteries rechargeable batteries capable of being recharged from an external source when removed from the stator and of being recharged by regenerative current applied by the stator segment windings.

Regarding claim 12, it is noted that Fatula Jr. et al. also show said batteries being rechargeable from an external source.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Filippis in view of Arnoux et al. as applied to claim 13 above, and further in view of Erdman et al.

Regarding claim 14, the motor of De Filippis modified by Arnoux et al. includes all of the limitations of the claimed invention except for said controller comprising an application specific integrated circuit (ASIC).

Erdman et al. show said controller comprising an application specific integrated circuit (ASIC, 200) for the purpose of improving efficiency.

Since De Filippis, Arnoux et al., and Erdman et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make said controller with an application specific integrated circuit (ASIC) as taught by Erdman et al. for the purpose discussed above.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information on How to Contact USPTO

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

10/20/03

A handwritten signature in black ink, appearing to read "Dangle". The signature is fluid and cursive, with a large initial "D" and a stylized "L" and "E".

DANGLE
PRIMARY EXAMINER